"EFFECTIVENESS OF COMPREHENSIVE NURSING INTERVENTIONS ON WELLBEING AND QUALITY OF LIFE AMONG SENIOR CITIZENS IN RURAL COMMUNITY, NEPAL"

SYNOPSIS SUBMITTED

by

SHILA MAINALI

For Ph.D. Degree in Faculty of Nursing

Swami Rama Himalayan University
Swami Ram Nagar, Jolly Grant, Dehradun

Background of the Study

Ageing is universal and physiological process but deleterious and degenerative process of progressive and generalized impairment of body functions affecting adaptive response to stress and increasing risk of age related disease. Various factors may be responsible for this condition like loss of memory, less socialization and loss of immunity power. Aging people are affected soon by any physical and environmental changes. In the world, elderly population accounts 8% of the total population in 2015 (UNFPA, 2017). There are about 416 million old people around the world and by 2020 world's 11.9% of population will be above 60 yrs. This will be increased to 15% in 2025 and 22% by 2050.

Old age people are considered as a dependent population. People are vulnerable to neglect and sometimes they also face abuse. The trend of elderly living has been changed like living alone, and in elderly homes due to socio-cultural and structural changes, migration of adult for economic purpose. The senior citizens who are living in home are also found to be depressed, feeling to be lonely and frustrated (Greef, 2011).

The ageing problem has not been adequately understood as socio-economic problem in Nepal. The aging population in Nepal is 8.13 % of total population with increased growth rate (3.07%), higher than total population growth rate (1.35%) (CBS, 2011) . This growth in elderly population is due to increase in life expectancy, decrease in fertility and mortality (NDHS 2016). Changes in social status, family's values, attitudes and structures, and adult's migration also have challenged for proper caring of senior citizens.

Elderly are at increased risk for both communicable and non-communicable disease including fall and injury. They have lack of awareness related to their health status and importance of care which further increases complications. The presence of various morbidities like hypertension, diabetes mellitus, skeletal problems, dental and mental problems make their life more dependent (Shah, et al. 2017). Thirty one percent of elderly had severe anxiety and depression related problems (Bhatta, 2009). The mental illness increases with increased age of elderly people like more than 75 years.

Aging is the age of losing interpersonal relationship also. Males and females become single as a widower and as a widow (Adhikari, 2013). The feeling of loneliness develops as a result of such situation and also by the development of physical and mental diseases.

The perception towards senior citizens needs to be changed as dependent and burden people to productive and matured. Comparatively more elderly people live in rural area than urban and usually they are active in household and handicraft activities and productive too. All senior citizens should not be considered only dependent. There are two types of their life: active life up to 75 years with productivity and care life of more than 75 years.

Quality of life is defined as "individuals perception of their position in life in the context of the culture and value systems in which they live, in relation to their goals, expectations, standards and concerns" by WHO. The elderly quality of life has been found different in various studies. When comparing among the old age people, the QoL score of middle-old age is lower than the young old group (Praveen and Ram,

2016). The social status, health problems, level of interaction and disability also affect the quality of life of elderly.

The country should respond both opportunities and challenges of increased seniors' people to promote an overall development. The development of elderly friendly society is quite in need. Health care system need to be focused on elderly health and successful aging. To have the effective use of resources, comprehensive program may help elderly for successful aging and good quality of aging life.

Comprehensive nursing interventions for elderly also focus on successful aging with minimization of disease and disability, increment of interactions and achievement of satisfaction with their condition. The holistic and practical approach in the care of elderly may fulfill their needs wellbeing and quality of life.

Need for the Study

The projection about senior citizen is making the younger adult aware that there will be triple population of aged people i.e. 473 million from 2009 and 1.6 billion in 2050 in the developing world. About 20% of aged people will be only in the developing country (Adhikari, 2013). An international and national policy and action plan are needed to address the challenges of aging. The number of elderly population and their problems are increasing all over the world.

Disability problem is very common among elderly, 83.29% had visual problem and the chronic disease related disability is a constant need. The prevalence of non-communicable disease is also increased e.g. hypertension found among 30.7% elderly. The presence of chronic disease, personal bad habits problems, dental and

mental problems affect their functional condition thereby affecting quality of life (Thakur et al. 2013).

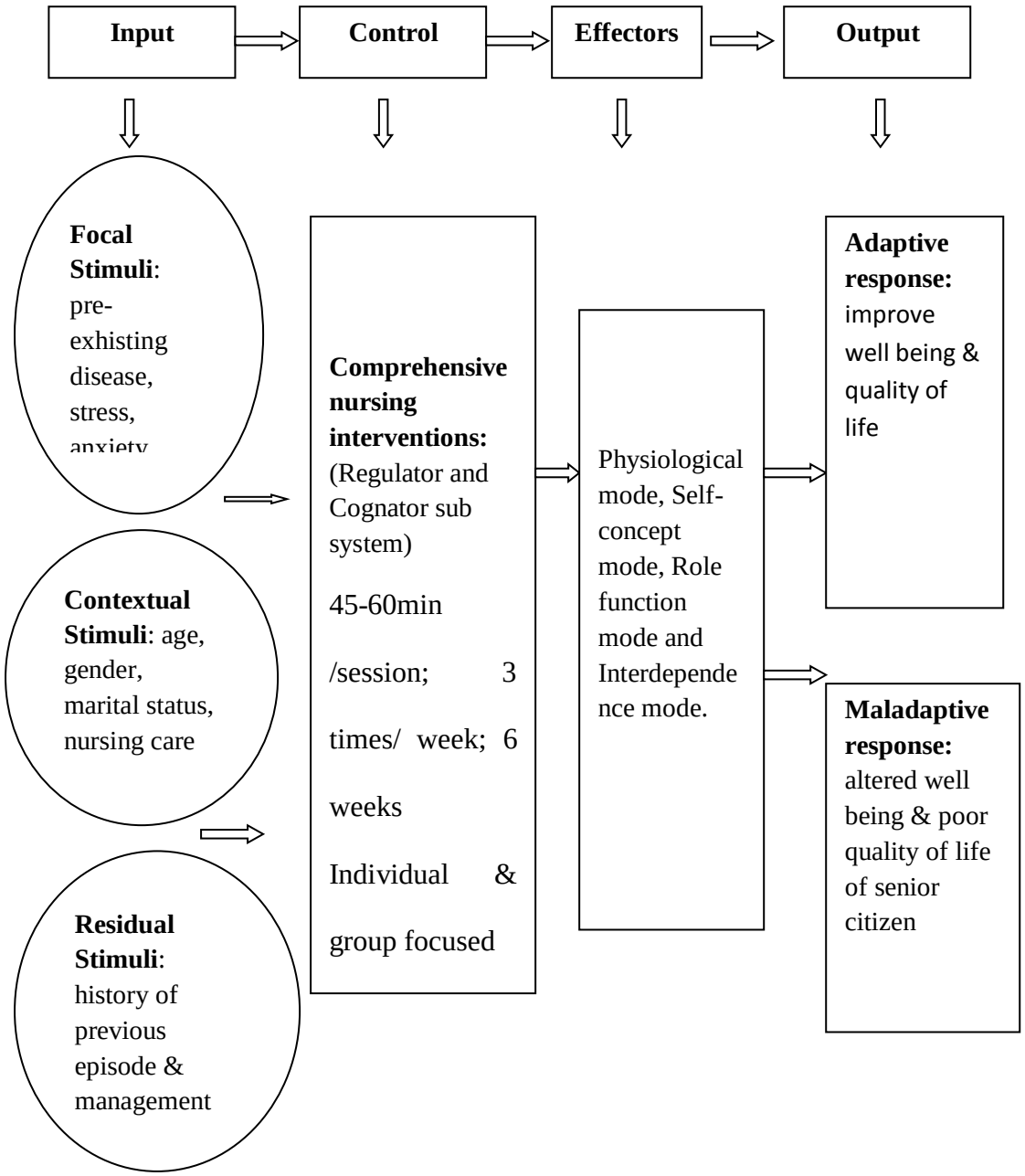
The seniors' unawareness about their health and disease status, risk factors may affect on morbidity and quality of life. A cross-sectional showed that 19% of elderly had poor QOL among 547 people in 396 households. Among abused elderly, only 17.2% reported good QOL. Majority of elderly (69%) had Physical health problems (Joshi, 2018). Though the QOL was average, social relationship scores were low in community based study among 50 elderly (Praveen & Ram, 2016).

Though the Nepal government has some policy regarding benefits for senior citizens like medical service, social security service; they are not adequate, narrowed to hospital boundary focusing on care of sick elderly people. There are no preventive and promotive services or comprehensive nursing services which need to be developed and extended to community level to improve well-being and quality of life of senior citizens. Many developmental organizations have started to talk about elderly issues, to include in their program. Complete assessment is also needed for the effective inclusion of aged people. In the curriculum of different level education including health and nursing, the geriatric subject has got good focus but has been forgotten to apply practically especially in the comprehensive way.

As a growing area of research, some studies have been conducted related to social and health status of elderly, quality of life but no study found on nursing care interventions among senior citizens in Nepalese context. It is an opportunity to practice on evidence based regarding comprehensive nursing interventions for wellbeing and quality of life of rural senior citizens in Nepal.

CONCEPTUAL FRAMEWORK

The conceptual framework of this study is based on Sister Callista Roy; Roy Adaptation Model (RAM). The RAM views individual as holistic adaptive system responding to different environmental stimuli in constantly changing environment. The responses depend on the coping process.


Input
Control
Effectors
Output
Focal Stimuli: pre-exhisting disease, stress, anxiety
Contextual Stimuli: age, gender, marital status, nursing care
Residual Stimuli: history of previous episode & management
Comprehensive nursing interventions: (Regulator and Cognator sub system)
45-60min /session; 3 times/ week; 6 weeks
Individual & group focused
Physiological mode, Self-concept mode, Role function mode and Interdependence mode.
Adaptive response: improve well being & quality of life
Maladaptive response: altered well being & poor quality of life of senior citizen

REVIEW OF LITERATURE

Quality of Life in Elderly

An elderly study in rural Nepal among 396 households and 547 senior citizens found the perception towards their quality of life, 19% had poor QoL and nearly 50% had reported their position in neutral. Among the abused elderly, only 17.2% reported their QoL to be good. The educated elderly had better quality of life than illiterate. There was positive correlation among educational status, property of ownership and perception of QoL. About 69% elderly reported the presence of physical health problems (Joshi et al., 2018).

Quality of life is a broad concept having multiple sub dimensions, encompassing both objective factors like health, living condition, having resources; and subjective perception about their life. Quality of life of elderly means the extent of elderly people for their own satisfaction or comfort with the life; the health and happiness of elderly people rather than wealth. Healthy life styles of the elderly people leads to a better quality of life. There are various factors affect the quality of life eg. Social interaction, health, education, leisure time activities, physical and psychological safety, productiveness or activity level, fulfillment of basic rights etc, which are known as 8+1 dimensions of quality of life. The multidimensional approach would be more practicable to measure the quality of life (Shrestha, 2017).

A cross-sectional study on Quality of life among 250 elderly population aged 60 years and above showed that they had various common morbidities like joint pain (42.8%), high blood pressure (22.4%) and diabetes mellitus (17.2%). Only 12.4% elderly people had dental problems. More than fifty percent elderly had excellent

quality of life and found significantly better among male seniors. The married elderly living currently with spouse and educated had better physical, environmental and psychological domains of quality of life (Shah et al., 2017).

The quality of life among late-life patients diagnosed with chronic diseases was assessed by using mix method analysis among 166 samples. Quality of life trajectories was revealed by plotting mean subscale of participants over last 18 months and subjective experiences and cognitive processes were analyzed by taking interview data. The study found gradual decline in physical and functional subscale whereas social QoL ratings improve on final three months. People create and strengthen relationships to manage better health and to receive instrumental and emotional support (Frazer & Mobley, 2017).

A community based study among fifty elderly people in South India revealed that the quality of life of those people was average but the social relationship scores were low among elderly. The quality of life score of middle-old age group is lower than young group. The elderly people residing in rural are satisfied with their environment. This cross-sectional study of quality of life was conducted in 2015 by using WHO questionnaire (WHO-QOL-BRIEF) among 60 and above year's people in OPD of PHC. The conclusion of the study was that there was urgent need for health education to build self-confidence of elderly. Educating family members regarding overall care of elderly also help to improve quality of life of elderly (Praveen & Ram, 2016).

The study to identify association between three dimensions of QoL (health related QoL (HQoL), social functioning and emotional well-being) among rural and urban adults 65 years and older was done in 2007 based on the findings of national health

and nutrition examination survey. The findings highlighted that the rural older adults had lower social functioning than urban. There was association of activities of daily living between all three dimensions but others were associated only with one or two dimensions of QoL. The study concluded that rural older people may have social isolation resulting in decreased social functioning. So they need specific interventions to maintain physical and mental health, increase community participation and strengthen social relationships to improve their QoL (Baernholdt et al. 2012).

A cross-sectional survey of 400 elderly community residents by using random sample in Tehran revealed that elderly people have relatively poor health related quality of life (HRQoL). Women have significantly poorer HRQoL which was found on univariate analysis. The age, sex, education and economic status were main determinants of poorer physical health related quality of life (SF-36) where as for the mental component summary score, only sex and economic status were main determinants. So, quality of life of elderly people should be improved by focusing on their health as well as economic status (Tajvar et al. 2008).

Epidemiology of Elderly Problems

A community based cross-sectional study among elderly population aged 60 years and above in Mysore, India found that elderly men were more functional than women i.e. 78% and 75% respectively. Four percent elderly population had severe functional impairment, no difference was found on gender. The young old age people, literates, from middle class and employed had significantly higher functional score. The aged people suffer from anxiety and insomnia (3.4%), somatic symptoms (2.9%) and even severe depression affects them (1.1%). Comparatively more

psychological distress was present among elderly women. They also had social dysfunction (1.5%). The mental illness increases with increased age of elderly people like more than 75 years (Boralingaiah et. al. 2012).

Measurement of Quality of Life

To compare two existing Quality measures (OPQoL: CASP-19 and World Health Organization Quality of Life questionnaire-version for older people (WHO QoL-OLD), a cross-sectional studies from the three surveys of older people in Britain was conducted in 2007-2008. The aim was to compare psychometric properties of the tools. Among the three surveys, two were cross-sectional and another one was longitudinal by using stratified random sampling. All the tools found performing well with the cross-sectional samples when applied psychometric test. Moreover, Older People Quality of Life (OPQoL) had internal consistency with ethnibus samples. It was concluded that the OPQoL has potential value in the outcome assessment of health and social interventions having multidimensional impact on peoples' lives (Bowling & Stenner, 2011).

Management of Elderly Issues

The biological, psychological and socio-economic changes in elderly develop various health problems, affecting all dimension of their health like depression, anxiety, inadequate nutrition intake, limited mobility. Preventive and practical approach to deal with elderly issues includes a comprehensive assessment and action plan. There are eighty-five activities under five level of prevention. An evidence based comprehensive instruction should be provided (Razavi et al., 2017).

Statement of the Problem

A study to assess effectiveness of comprehensive nursing interventions on wellbeing and quality of life among senior citizens in rural community, Nepal.

Aim of the study

To promote the well being and improve quality of life of senior citizens by providing comprehensive nursing interventions.

Objectives of the Study

Primary Objectives

1. To assess the wellbeing and quality of life among senior citizens in community, Nepal.
2. To assess the effectiveness of comprehensive nursing interventions on wellbeing and quality of life among senior citizens in rural community, Nepal.

Secondary Objectives

1. To determine correlation between wellbeing and quality of life among senior citizens in rural community, Nepal.
2. To find out association between wellbeing and socio- demographic variables of senior citizens.
3. To find out association between quality of life of senior citizens and their socio-demographic variables.

Research Hypothesis

The research hypothesis will be tested at the significance level of 0.05.

H_1: Comprehensive nursing interventions will be effective in improving wellbeing of senior citizens in rural community.

H_2: Comprehensive nursing interventions will be effective in improving quality of life of senior citizens in rural community.

H_3: There is correlation between wellbeing and quality of life of senior citizens.

H_4: There is association between wellbeing and socio-demographic variables of senior citizens.

H_5: There is association between quality of life and socio-demographic variables of senior citizens.

Operational Definitions

Effectiveness: means the extent to which the comprehensive nursing interventions improve the wellbeing and quality of life of senior citizens as measured by Scale of general wellbeing (SGWB) and WHOQOL- BREF.

Comprehensive Nursing Interventions: well planned nursing activities having 12 sessions for six weeks. The components of the sessions include health promotion activities for wellbeing and quality of life of elderly.

Wellbeing: an overall state of comfort, emotion, satisfaction and adjustment of senior citizen which is measured by scale of general wellbeing (SGWB).

Quality of Life (QoL): refers to older adults' subjective expression of their health, living conditions, and satisfaction to the old age condition on different domains like

physical, emotional and social. In this study, WHOQOL-BREF measures their condition.

Senior Citizens: older adults aged 60 years to 75 years residing in their own home but not in social centre like elderly home or rehabilitation centre in the community for at least six months.

RESEARCH METHODOLOGY

Research Approach: quantitative approach

Research Design: experimental; randomized controlled study with follow up

Phase I: Development of the Comprehensive Nursing Interventions

Phase II: Experimentation of Comprehensive Nursing Interventions

S.N.	**Study Group**	**Pre intervention assessment**	**Intervention**	**Post intervention assessment**			
				1 wk	**1 month**	**3 month**	**6 month**
1.	Experimental	O_1	X	O_2	O_3	O_4	O_5
2.	Control	O_1	_	O_2	_	_	_

$O_{1:}$ observation before interventions

X: comprehensive nursing interventions to senior citizens;

80-90 minutes/session, twice a week, 6 weeks.

$O_{2:}$ post assessment after 1 week of intervention

O_3: post assessment after 1 month of intervention

O_4: post assessment after 3 month of intervention

O_5: post assessment after 6 month of intervention

Research Variables:

Independent: Comprehensive nursing interventions

Dependent: Wellbeing and quality of life of senior citizens

Setting:

Rural municipalities, Nuwakot district, Nepal. There are 74 rural municipalities in Province No. 3, spreaded in thirteen districts. It is governed by rural council. The Gaupalika/rural municipality is further subdivided into wards. It was established in 2017 as a replacement of Village Development Committee (VDC). District's population 277471, life expectancy is 70.8 years. There are 10 rural municipalities in this district. The population of one rural municipality is maximum 27000 and minimum 13000 (2011). The maximum density of one municipalicy is 352 and the minimum is 138.

Target Population: Senior citizens aged 60 to 75 years.

Accessible Population: all senior citizens aged 60 years to 75 years who are living in their home in those rural municipalities.

Sampling Technique:

Multistage random sampling techniques will be used to select the sample. From the district, 2 rural municipalities, then 2 wards of those municipalities will be selected and then random selection of sample will be done.

Sample size:

The maximum allowable error is 0.05 considered for sample size and the power of test for this study is 80%.

Formula: $n = \frac{2pq\,(za+z\beta)^2}{d^2}$ Where, a= 0.05 β=0.20

Where, p= (p1+p2)/2 =(51+49)/2=100/2=50 (0.5)

q= 1-p = (1-0.5) = 0.5

d= p1-p2 = 51-49= 2 (0.02)

Or, 2x (1.96+0.845)/0.04) ²x 0.25

2x 5.61x0.25/0.08

2.805/0.08= 35.06= 35

Considering 12% response error: 4.20

So the exact sample size is 39x2= 78

Final sample size is 120. Sixty will be in each experimental and control group.

Participants will be allocated randomly for the experimental and control group (concealed allocation).

Inclusion criteria

The following conditions will be the inclusion criteria in this study:

1. Age: 60 to 75 years
2. The older adult who can talk and listen.
3. The older people who are living in their home setting.
4. The older people living in that community for six month.
5. The older people who agree to participate in the study.

Exclusion criteria

The following conditions will be the exclusion criteria in this study:

1. The senior citizens who have just returned from hospital after discharge (within a week).
2. Who are in end stage of life due to disease condition.
3. Who are presently living in a geriatric centre or any rehabilitation centre of the community.

Procedure for data collection

After getting the permission ethically and administratively from local governing body, rural municipalities will be selected by multi stage random sampling. The community will be visited and locate the house. After taking the written consent, pre-assessment will be done in senior citizens only after developing rapport. The privacy will be maintained during interview.

Instrumentations and Tools:

In section I: a semi structured socio-demographic questionnaire by including age, gender, educational and occupational status, will be developed by the researcher herself and interview will be done with the senior citizens.

In section II: Scale of general wellbeing (SGWB) will be used by the researcher. It includes 18 questions in 6 point likert scale. The score 0-25 shows severe and 81-110 show positive wellbeing.

In section III: WHOQOL- BREF will be used to assess the quality of life. It is a standardized instrument having 26 questions with four domains. Each domain has five point likert scales (r-0.84). The value of single item transformed to score 0 to 100. This tool has already been used in Nepalese study.

The Nepalese version of this scale will be used. The same tools will be used to both experimental and control group at the starting of study and after intervention in different time intervals.

Validity and Reliability of the Instruments:

For section I, the research advisor, geriatric subject experts and psychiatrists will be consulted for the maintenance of validity. And Cronbach's alpha test will applied for its' reliability.

For section II and III, both the validity and reliability have already been established.

Pilot Study

Pilot study will be conducted among 12 senior citizens residing in similar rural municipality to determine initial feasibility and to generate effect size estimation of the comprehensive nursing interventions.

Intervention

Among the 120 sample, 60 will be assigned for intervention and another 60 will be assigned for the control groups. The intervention consists of comprehensive nursing interventions of 80-90 minutes, two sessions in a week till 6 weeks. Then the effect of comprehensive nursing interventions will be assessed between groups in different time interval. The nursing interventions will be provided to both individual and group.

Details of comprehensive nursing interventions

Session I: After geriatric assessment at home; discussion on elderly problems, preventive and managing ways. Exploration of senior citizens' and their family's views/perception. Informal education on prevention of fall and injury.

Session II: Revision of first session and continue informal education on management of pain and use of comfort devices e.g. hot water bag, pillow. Demonstration of positioning & Range of motion (ROM) exercise.

Session III: Informal education on digestive & sleep problems, focus on sleep hygiene. Discussion & demonstration of hygiene care e.g. back care &foot care. Use of shoes than slipper.

Session IV: Demonstration of nutritious food practice e.g. khichadi, ragi, mixture of sattu and milk.Group counseling as per need to help psychologically.

Session V: Revision of previous session. Formal teaching session on chronic diseases, preventing/minimizing disability, safety measures. Discussion on importance of interpersonal and social interactions

Session VI: Conducting senior citizen's meeting; try to address their perceived issues. Getting immediate & later feedback about interaction program. Planning of regular meeting (scheduling) by clarifying its' importance.

Session VII: Demonstration of relaxation exercise; deep breathing & coughing, and progressive muscle relaxation.

Session VIII: Discussion on psychological issues of elderly (managing loneliness, provision of spiritual activities like praying, bhajan)

Session IX: Formation of elderly network for problem solving. Discussing activities of elderly network, focusing on advantage.

Session X: Informal education on prevention from communicable diseases.

Session XI: Enhancement of self-esteem of elderly. Prevention of different types of elderly abuse. Importance of utilization of all services provided by government for elderly.

Session XII: Revision and reinforcement for earlier sessions. General summary on their diseases, medicines and side-effects including follow up. Termination of intervention.

Ethical Consideration

Ethical clearance will get from Swami Rama Himalayan University and institutional review committee of Nepal Medical College and office of rural municipalities. Written consent will be obtained from senior citizens and their family members. Privacy will be maintained during interview.

Plan for Data Analysis

The collected data will be checked daily for its completeness and accuracy. And data will be coded, organized and will be entered in Epi Data and then analysed on SPSS version 20.0. Descriptive statistics will be applied for analysis like frequency, percentage, mean and standard deviation (SD). After testing the normality of data, inferential statistics will be used like independent and paired sample t test, ANOVA and regression analysis etc. If the data is non-normal: non-parametric test will be used.

REFERENCES

1. Adhikari S. (2013). Health, nutrition and care for senior citizens of Nepal in twenty first century. Journal of health and allied sciences, 3 (1), 73-75.
2. Baernholdt M., Yan G., Hinton I., Rose K. and Mattos M. (2012). Quality of life in rural and urban adults 65 years and older: Findings from the national health and nutrition examination survey. Journal of rural health, 28 (4), 339-347. doi: 10.1111/J.1748-0361.2011.00403.
3. Bhatta R. (2009). Social and Health Status of Elderly Population in Far-Western Region, Nepal. Nepal Health Research Council, Kathmandu.
4. Boralingaiah, P., Bettappa, P., & Kashyap, S. (2012). Prevalence of psycho-social problems among elderly in urban population of mysore city, karnataka, India. *Indian journal of psychological medicine*, *34*(4), 360-364. doi: 10.4103/0253-7176.108221.
5. Bowling, A. and Stenner, P. (2011). Which measure of quality of life performs best in older age? A comparision of the OPQOL, CASP-19 and WHOQOL-OLD. Epidemiol community health, 65 (3), 273-80. doi: 10.1136/jech.2009.087668.
6. Central Bureau of Statistics. Kathmandu, Nepal.
7. Chalise, HN. & Basnet, M. (2017). Abuse of older adults residing in the community of Nepal. Journal of gerentology and geriatric research, 6, 415.
8. Chalise, HN. (2012). Socio-demographic and health status of Nepalese elderly. Indian journal of gerontology, 26 (2), 151-160.

9. Durgawala, PM., Shinde, M. and Murugajothy, VM. (2014). Study of assessment of quality of life in elderly residing in rural area. International journal of science and research, 3 (10), 1291-1294. ISSN (online): 2319-7064.
10. Frazer, MS. and Mobley, P. (2017). A mixed methods analysis of quality of life among late-life patients diagnosed with chronic illnesses. Health quality life outcomes, 15, 222. doi: 10.1186/s12955-017-0797-3.
11. Government of Nepal (2074). Draft of National Health Policy 2074. GoN. Kathmandu, Nepal.
12. Government of Nepal (2014). Population Monograph of Nepal, Volume I & II (1st edition). Central bureau of statistics, Ramshah path, Kathmandu, Nepal.
13. UNFPA Annual Report 2017.
14. Greef, D. (2011). Frail institutionalized older persons: A comprehensive review on physical exercise, physical fitness, activities of daily living & quality of life. American journal of physical medicine & rehabilitation, 90 (2), 156-168. ISSN: 0894-9115.
15. Joshi, MR., Chalise, HN. & Khatiwada, PP. (2018). Quality of life of Nepalese elderly living in rural Nepal. Journal of gerontology & geriatric research, 7(5), 484. doi: 10.4172/2167-7182.1000484.
16. Mccaffrey, N., Kaonbwa, B., Currow, D.C. & Ratcliffe, J. (2016). Health and Quality of Life Outcomes, 14, 133. doi: 10.1186/s12955-016-0537-0.
17. Ministry of Health, Nepal, New Era and ICF (2017). Nepal demographic and health survey 2016, Kathmandu, Nepal. Ministry of Health, Nepal.

18. Molton, I. and Jensen MP. (2010). Aging and disability: Bio-psychosocial perspectives. Physical medicine and rehabilitation clinics of North America, 21 (2), 253-65. doi: 10.4103/0253-7176.108221.
19. Praveen, V. and Ram MA. (2016). Quality of life among elderly in rural area. International journal of community medicine and public health, 3 (3), 754-757. doi: 10.18203/2394-6040.ijcmph 20160646.
20. Razavi, SM., Razavi, MS. & Pirhosseinlose M. (2017). A Preventive Approach to Elderly People Health Problems. Journal of Gerentology & Geriatric Research, 6(5), 450. doi: 10.47172/2167-7182.1000450.
21. Shah, VR, Christian, DS., Patel, MM. and Sonaliya, KN. (2017). Quality of life among elderly population residing in urban field practice area of a territory care institute of Ahmedabad city, Gujarat. Journal of family medicine and primary care, 6 (1), 101-105. doi: 10.4103/2249-4863.214965.
22. Shrestha, R. (2017). Health related quality of life and impact of educational intervention on knowledge regarding living well among patients with coronary heart disease. PhD Thesis. Tribhuvan University.
23. Shrestha, DR. (2012) Elderly Women. Reproductive Health: National and International Perspectives, 2nd edition, Dhulikhel, Nepal, pp. 313-314.
24. Tajvar M, Arab M and Montazeri A. (2008). Determinants of health related quality of life in elderly in Tehran, Iran. BMC public health, 8 (323). doi: 10.1186/1471-2458-8-323.
25. Thakur RP, Banerjee A & Nikumb VB. (2013). Health Problems among the Elderly: A cross-sectional study. Annals of Medical & Health Science Research, 3(1), 19-25. doi: 10.4103/2141-9248.109466.

26. Timalsina R. (2015). Comprehensive textbook of geriatric nursing, first edition. Kathmandu: Samiksha Publication Pvt. Ltd.
27. United Nations (2005). Living arrangements of older persons around the world. New York: Department of Economic and Social Affairs, Population Division, United Nations Secretariat.